

CLAIMS

1. A chemical mechanical planarization (CMP) system, the system comprising:
 - a polishing surface;
 - a platen disposed along an underside of the polishing surface; and
 - a retaining ring surrounding the platen.
2. The CMP system of claim 1, wherein the retaining ring includes a lower annular sleeve and an upper annular sleeve moveably disposed over the lower annular sleeve.
3. The CMP system of claim 1, wherein the polishing surface is a belt.
4. The CMP system of claim 2, wherein the lower annular sleeve includes at least two lower curved members and the upper annular sleeve includes at least two upper curved members, each of the at least two upper curved members being moveably disposed over a corresponding lower curved member.
5. The CMP system of claim 2, wherein the lower annular sleeve includes a base having an inner sidewall and an outer sidewall extending therefrom and the upper annular sleeve includes a top having an inner sidewall and an outer sidewall extending therefrom.

6. The CMP system of claim 5, wherein an interior surface of each of the inner and outer sidewalls of the upper annular sleeve includes a protrusion, and an exterior surface of each of the inner and outer sidewalls of the lower annular sleeve includes a protrusion.

7. The CMP system of claim 6, wherein the protrusions of the upper and lower annular sleeves are positioned such that when the protrusion of the upper annular sleeve abuts against the protrusion of the lower annular sleeve, the top of the upper annular sleeve aligns to the underside of the polishing surface without disturbing an interaction angle between a wafer and the polishing surface.

8. The CMP system of claim 1, wherein a top surface of the upper annular sleeve has a channel formed therein.

9. The CMP system of claim 1, wherein a top surface of the upper annular sleeve has at least one hole defined therein.

10. The CMP system of claim 1, wherein the lower annular sleeve is fixed.

11. A method for reducing a consumption of compressed dry air (CDA) during a chemical mechanical planarization (CMP) operation, the method comprising:

surrounding an air-bearing platen with a retaining ring having a moveable sleeve;

moving the moveable sleeve of the retaining ring into close proximity with an underside of a polishing surface; and

conducting a CMP operation.

12. The method of claim 11, wherein the operation of moving the moveable annular sleeve includes:

stopping the moveable sleeve at a point before the moveable sleeve disturbs an interaction angle between a wafer and the polishing surface.

13. The method of claim 11, wherein the operation of moving the moveable annular sleeve includes:

flowing fluid into an interior of the retaining ring.

14. The method of claim 13, wherein the operation of flowing fluid into an interior of the retaining ring includes:

channeling a portion of the fluid from the interior of the retaining ring to an interface between the underside of the polishing surface and a top of the moveable sleeve.

15. The method of claim 13, wherein the fluid is de-ionized water.

16. The method of claim 11, wherein the polishing surface is a belt.